

AD _____

GRANT NUMBER DAMD17-96-1-6273

TITLE: The Breast Health Intervention Evaluation Study

PRINCIPAL INVESTIGATOR: Daniel S. Blumenthal, M.D.

CONTRACTING ORGANIZATION: Morehouse School of Medicine
Atlanta, Georgia 30310-1495

REPORT DATE: September 1997

TYPE OF REPORT: Annual

PREPARED FOR: Commander
U.S. Army Medical Research and Materiel Command
Fort Detrick, Frederick, Maryland 21702-5012

DISTRIBUTION STATEMENT: Approved for public release;
distribution unlimited

The views, opinions and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy or decision unless so designated by other documentation.

DTIC QUALITY INSPECTED 3

| REPORT DOCUMENTATION PAGE | | | Form Approved OMB No. 0704-0188 | |
|---|---|--|---|---|
| Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503. | | | | |
| 1. AGENCY USE ONLY (Leave blank) | | 2. REPORT DATE September 1997 | | 3. REPORT TYPE AND DATES COVERED Annual (1 Aug 96 - 31 Jul 97) |
| 4. TITLE AND SUBTITLE The Breast Health Intervention Evaluation Study | | | 5. FUNDING NUMBERS DAMD17-96-1-6273 | |
| 6. AUTHOR(S) Daniel S. Blumenthal, M.D. | | | | |
| 7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Morehouse School of Medicine Atlanta, Georgia 30310-1495 | | | 8. PERFORMING ORGANIZATION REPORT NUMBER | |
| 9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) Commander U.S. Army Medical Research and Materiel Command Fort Detrick, Frederick, Maryland 21702-5012 | | | 10. SPONSORING/MONITORING AGENCY REPORT NUMBER | |
| 11. SUPPLEMENTARY NOTES | | | | |
| 12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution unlimited | | | 12b. DISTRIBUTION CODE | |
| 13. ABSTRACT (Maximum 200) <p>The Breast Health Intervention Evaluation (BRIE) Study will evaluate the relative effectiveness of three different approaches to breast health messages--a fear appeal, a positive affect appeal, and an affectively neutral, cognitive appeal. The three interventions will be structured as three 10-12 minute videotaped presentations targeting 450 African American women residing in three rural communities in Georgia (150/community). Each site will receive one of the three intervention approaches, randomly selected, to be presented within a 60-minute workshop format. Workshops will be coordinated by a Community Lay Health Worker at each site. Pre-/post-intervention KAP surveys will be administered. Participants will be provided with breast self-examination information and breast screening referral information. A 12-month follow-up will be conducted. We will provide referral services to ACR-approved sites for study participants. Community access and participant recruitment will be facilitated through our Health Promotion Resource Center.</p> <p>Analysis and development of the videos will be a collaborative effort between Morehouse School of Medicine and Georgia State University which will also provide expertise in audience analysis and lay health worker training. Working collaboratively creates unique strengths that do not currently exist elsewhere in Georgia, and will enable us to combine communications theory with public health research practice.</p> | | | | |
| 14. SUBJECT TERMS Breast Cancer | | | 15. NUMBER OF PAGES 29 | |
| | | | 16. PRICE CODE | |
| 17. SECURITY CLASSIFICATION OF REPORT Unclassified | 18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified | 19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified | 20. LIMITATION OF ABSTRACT Unlimited | |

FOREWORD

Opinions, interpretations, conclusions and recommendations are those of the author and are not necessarily endorsed by the U.S. Army.

____ Where copyrighted material is quoted, permission has been obtained to use such material.

____ Where material from documents designated for limited distribution is quoted, permission has been obtained to use the material.

____ Citations of commercial organizations and trade names in this report do not constitute an official Department of Army endorsement or approval of the products or services of these organizations.

____ In conducting research using animals, the investigator(s) adhered to the "Guide for the Care and Use of Laboratory Animals," prepared by the Committee on Care and Use of Laboratory Animals of the Institute of Laboratory Resources, National Research Council (NIH Publication No. 86-23, Revised 1985).

✓ ____ For the protection of human subjects, the investigator(s) adhered to policies of applicable Federal Law 45 CFR 46.

____ In conducting research utilizing recombinant DNA technology, the investigator(s) adhered to current guidelines promulgated by the National Institutes of Health.

____ In the conduct of research utilizing recombinant DNA, the investigator(s) adhered to the NIH Guidelines for Research Involving Recombinant DNA Molecules.

____ In the conduct of research involving hazardous organisms, the investigator(s) adhered to the CDC-NIH Guide for Biosafety in Microbiological and Biomedical Laboratories.

 9/12/92

PI - Signature Date

DTIC QUALITY INSPECTED 3

TABLE OF CONTENTS

| | |
|---|-----------|
| Introduction | 5 |
| Experimental Methods | 7 |
| Assumptions | 7 |
| Procedures | 7 |
| Results & Discussion | 9 |
| Recommendations in Relation to the Statement of Work | 19 |
| Conclusions | 20 |
| References | 21 |
| Appendix | 22 |

Introduction

The Breast Health Intervention Evaluation (BRIE) Study will evaluate the relative effectiveness of three different approaches to breast health messages--a fear appeal, a positive affect appeal, and an affectively neutral, cognitive appeal. The three interventions will be structured as three 10-12 minute videotaped presentations targeting 450 African American women residing in three rural communities in Georgia (150/community). Each site will receive one of the three intervention approaches, randomly selected, to be presented within a 60-minute workshop format. Workshops will be coordinated by a Community Lay Health Worker at each site. Pre-/post-intervention KAP surveys will be administered. Participants will be provided with breast self-examination information and breast screening referral information. A 12-month follow-up will be conducted. We will provide referral services to ACR-approved sites for study participants. Community access and participant recruitment will be facilitated through the MSM Health Promotion Resource Center.

Analysis and development of the videos will be a collaborative effort between Morehouse School of Medicine (MSM) and Georgia State University (GSU) which will also provide expertise in audience analysis and lay health worker training. The collaboration of two institutions creates unique strengths that do not currently exist elsewhere in Georgia. Further, working collaboratively will enable us to combine communications theory with public health research practice.

Relatively little research has been devoted to identifying effective strategies for increasing breast cancer screening rates among black women. Black and white women alike are regularly exposed to health-related messages through the mass media and the work of public agencies and nonprofit organizations. Commonly used health education materials and approaches, however, may be inappropriate for minority populations.

Research examining the efficacy of health promotion message appeals, content, and channels of delivery has likewise been very limited in public health research. Social scientists and health promotions professionals have maintained that if health promotion campaigns are to influence the audience as intended, they must be culturally, demographically, and geographically appropriate. In response, many health educators working with African American populations have simply substituted images of black models for those of white models in printed material, or have restructured health promotion efforts with little attention, if any, to theoretical foundations or guiding principles of health communication formulation.

Finally, research examining the defining variables of cultural sensitivity is also very limited regarding health promotion efforts specifically targeting African American audiences. Culture has been described in numerous ways, often giving the appearance that the concept is difficult to define empirically. For the purposes of this research, we will define culture as a set of interlocking cognitive schemata that construct and give meaning to what people do in their everyday lives. In order to understand how culture works, it is necessary to examine the storage and transmission of information and beliefs shared by a group of people. These strategies are used to guide health seeking behavior and give it meaning to people's lives. Cultural knowledge provides "local logic" by which people make sense of their world and solve their health problems by providing a bounded set of options that motive specific, help-seeking behavior. Finally, cultural knowledge and practices are both reproduced and transformed within specific social

environments and are constrained by the economic and political context of a specific group. Given the complexities of everyday life, cultural knowledge and practices are constantly being generated, thus creating shifts in the knowledge that is used for guiding behavior responses to disease, or threat of disease.

PREVIOUS EXPERIENCE

A Morehouse cancer screening project entitled, *Avoidable Mortality from Cancer in Black Populations* (AMCBP) targeted black women in the inner-city. The study sought to determine if an in-home educational intervention conducted by a lay health worker could increase adherence among low-income black women to breast cancer screening schedules as well as increase the women's knowledge and change their attitudes regarding these cancers. The results of the study showed a 2.9% increase in Pap smear screening, and a 34.5% increase in breast screening. AMCBP's study method of educational intervention differs from those in the proposed project (in-home vs. community group); however, the target group is the same, and the proposed study emphasizes culturally appropriateness and is based on a philosophy of empowering low-income black women to help themselves and one another.^{1,2}

Through a subcontract with Meharry Medical College in Nashville, Tennessee, the *Cancer Prevention Awareness Program* at Morehouse School of Medicine is currently testing an intervention designed to increase awareness of preventable cancer risk factors among African American Atlantans. The intervention involves a decentralized approach with program staffers regularly visiting 5 health centers, as well as numerous churches, libraries, restaurants, and the Atlanta University Center schools. At each of the health centers, staffers distribute literature on cancer prevention either directly to clients, or in conjunction with the quarterly re-certification process of the Women, Infant, & Children (WIC) Program. Evaluation of this program involves completion of a brief questionnaire assessing whether cancer screening was performed, and whether the client received the cancer prevention literature. At the other locations, program implementation is designed to accommodate the needs and circumstances relative to each site. Stressing the black college as a community resource, the program targets lung, breast, prostate, and colon cancer, risk factors for these cancers including smoking, low fiber/high fat diets, and sedentary lifestyles. The program emphasizes that risk factors involving lifestyle issues are under an individual's control, and it seeks to provide the motivation and specific, culturally appropriate, attainable approaches toward the adoption of healthier lifestyle practices.

The Drew/Meharry/Morehouse Consortium Cancer Center represents a major commitment to cancer research by three of the four minority medical schools in the U.S. The overall objective of the Cancer Center is to mobilize the intellectual and scientific resources into a collaborative research effort aimed at reducing the high cancer rate among blacks. To strengthen this effort, each of the participating institutions has created ongoing relationships with local and regional health agencies and organizations with demonstrated cancer control and related research interests and capabilities. For example, Morehouse enjoys the full cooperation of the Georgia Center for Cancer Statistics at Emory University, the Centers for Disease Control and Prevention, the Georgia Division of Public Health, Fulton County Health Department, and Georgia Division and National Offices of the American Cancer Society, and the National Black Women's Health Project.

Experimental Methods

The three interventions will be structured as three 10-12 minute videotaped presentations targeting 450 African American women residing in three rural communities in Georgia (150/community). Each site will receive one of the three intervention approaches, randomly selected, to be presented within a 60-minute workshop format. Workshops will be coordinated by a community lay health worker at each site. Pre-/post-intervention KAP surveys will be administered. Participants will be provided with breast self-examination information and breast screening referral information. A 12-month follow-up will be conducted. We will provide referral services to ACR-approved sites for study participants. Community access and participant recruitment will be facilitated through the MSM Health Promotion Resource Center.

Assumptions (Hypothesis)

A culturally appropriate breast health promotion message will motivate increased compliance to recommended cancer screening schedules, and changes in knowledge and attitudes. Affectively positive and negative messages will result in greater change than will affectively neutral, cognitive messages. The relative ordering of the two affective messages is unknown.

This hypothesis incorporates the following sub-hypotheses:

- Knowledge of breast cancer risks and prevention among women aged 45-65 will increase by approximately 30% from baseline to immediate post-test.
- At follow-up, the percentage of women aged 45-65 who have had a clinical breast examination within the past year will increase by at least 20%.
- At follow-up, the percentage of women aged 45-65 who have had a mammogram within the past year will increase by at least 20% and will be at least 50%.

Procedures

The GOAL of the proposed Morehouse School of Medicine Breast Health Intervention Evaluation Study is: To evaluate and determine the relative efficacy of three different approaches to breast health education messages--a fear appeal, an appeal using a positive affect, and an affectively neutral, cognitive appeal--among African American women residing in three rural communities in Georgia. The project will aim:

1. to provide information on breast cancer screening to women in the community and motivate them to seek screening;
2. to increase access to breast cancer screening services;
3. to determine the most effective breast health communications approach (among three under investigation) to use in African American populations.

This proposed work will be achieved by the following procedures/objectives:

OBJECTIVE 1: Develop the culturally appropriate breast health communication tools, lay health worker training materials, and data gathering instruments.

Sub-Objective 1.1: Develop and pre-test a breast health message based on a fear appeal, a message based on an affectively positive appeal, and a message utilizing an affectively neutral cognitive appeal.

Sub-Objective 1.2: Develop and pre-test a lay health worker training curriculum.

Sub-Objective 1.3: Develop/Revise data gathering instruments.

OBJECTIVE 2: Organize each of the three rural intervention communities around the problem of breast cancer.

Sub-Objective 2.1 Define and describe the sociodemographics of each community.

Sub-Objective 2.2 Identify, hire, and train one lay health worker for each community.

Sub-Objective 2.3 Recruit study participants according to established guidelines and selection criteria.

OBJECTIVE 3: Implement the intervention in the three target communities.

Sub-Objective 3.1 Train three community lay health workers.

Sub-Objective 3.2 Provide an intervention to 150 women aged 45-65 in each of the 3 target communities.

Sub-Objective 3.3 Increase access to breast cancer screening services for low-income women in the intervention communities.

OBJECTIVE 4: Evaluate the impact of the comprehensive intervention on breast cancer screening knowledge, attitudes, and practices by measuring these parameters at baseline, and following the intervention.

Sub-Objective 4.1 Through pre- and post-intervention questionnaires, measure changes in breast cancer knowledge, attitudes and practices (including obtaining breast exams and mammograms) among women aged 45-65 in the intervention communities.

Sub-Objective 4.2 Through follow-up data gathered one year post-exposure, measure long term changes in knowledge, attitudes, and actual practices.

Results & Discussion

One of the challenges of collaborative, multidisciplinary, inter-institutional research is equalization of knowledge bases. Indeed, one of the unique strengths of the present study is the opportunity to combine communication theory with public health practice. The realization of this opportunity necessitated considerable effort on the part of the GSU Research Team to gain an understanding of the public health promotion campaign literature from the perspective of communication research and practice. Therefore, beginning early in Year 01 and continuing throughout, the GSU Team undertook an extensive literature review. The result of this extracurricular activity, an annotated bibliography prepared by Dr. Darin W. Klein, is included as an appendix to this report.

According to the Statement of Work, Months 1-12 (Year 01) involved the following activities:

Month

| | |
|--------|---|
| 1 - 3 | Focus Groups Videoscript development |
| 3 - 4 | Videoscript process evaluation Videoscript assessment Pre-testing of messages |
| 4 - 6 | Lay Health Worker Training Curriculum Development Develop Procedures Manual |
| 7 - 8 | Recruit, hire, & train Community Lay Health Worker in each site |
| 9 - 12 | Survey Questionnaire Assessment & Modifications |

FOCUS GROUP DATA

As planning for the focus groups progressed, it became apparent to both the GSU and the MSM research teams that the quality and depth of the anticipated data could be significantly affected by the cultural orientation of the focus group leader. Since no age appropriate, African American woman was a member of either research team, we enlisted the services of Mary P. Williams, EdD, PA-C, Associate Professor of Community Health and Preventive Medicine, and Director of the Morehouse Gerontology Center. Dr. Williams also currently serves as the Principal Investigator of the Breast Health Belief Systems Study (DAMD17-97-1-7312) recently funded by the USAMRMC. Using her contacts with the USDA Cooperative Extensive Service at Fort Valley State University, a rural HBCU located in Fort Valley, Georgia, we conducted three focus groups composed of 10-15 rural, African American women demographically matched to the study's target population. Dr. Williams served as the focus group leader for all three. The focus groups were audio- and videotaped. Personnel from GSU Department of Communication, our subcontracting partner in this study, attended to observe unobtrusively.

The selection of variables was relatively straightforward in this project. We were looking at accurate knowledge about, and attitudes toward, breast cancer. In terms of stimulus variables, we were

looking at three different kinds of affect. There were some possible confounding variables such as religiosity but they can be assessed as part of the overall attitude variable.

Focus Group I (FG I)

For the accurate knowledge variable, some people talked about media as their source of information. However, specific levels of knowledge about breast cancer and mammography including conceptions and misconceptions were unclear. Equally important was the sources of information/beliefs. In this regard, talking about breast health (obtaining information) with peers/friends emerged as a significant source. During the analysis of these data, it became apparent that deeper probing is needed on this issue, specifically, when do these women talk about breast cancer with their friends, what gets said and what gets left out? What kinds of information do their friends give them about breast cancer? However, an interesting issue to emerge was repeated mention of home remedies. This should be pursued further in subsequent groups.

On the attitude end, several things came out of the FG I that are worth following up on. One generally interesting finding was this group's general distrust or suspicion of doctors. This finding should be explored more deeply in subsequent groups. Similarly, why the distinction between "health care providers" and "doctors" as this group did? This is an important issue that will affect the design of the messages.

Another notable outcome from FG I was the importance of religion. Especially intriguing was a respondent's comment that suggested that a doctor's spiritual cooperation could be important. We need to continue looking at the role of religion and consider how doctors might be playing a role in that. The issue of religiosity surfaced many times suggesting that if one really has faith, then that person should leave things to the Lord. If that belief is commonly held (one respondent accepts that the Lord provides us with doctors), then this is also important for us to know in our message design and for us to measure at the outset.

Another issue which falls broadly under the rubric of attitude is respondents' *fears* of breast cancer. Some respondents showed the natural tendency to deny that there might be a problem. If there is a problem, they don't want to know about it. The theme of denial should be followed and linked to the issues of prevention and/or early diagnosis and cure. Exploring this issue may help reveal some of the underlying beliefs of our target group.

The third variable that we explored had to do with message design. Dr. Williams asked some questions about what respondents would like to see in message. The answers were to have it presented in written and oral form and in clear, simple language.

Focus Group II (FG II)

A number of comments were made about the problems of communication between health care givers and patients. These are summarized as follows:

- Doctors are not thorough enough with their patients. They don't spend enough time with their patients and they don't ask them enough questions about how they're doing.

- Patients feel they are mishandled by nurses in their clinical care: too much time spent waiting. When they do get to see their doctors, their doctors talk in technical jargon which they don't understand.
- Participants expressed the desire to have problems explained to them by doctors in lay terminology.
- One participant said she would like to have check-up information written down and then gone over with by the doctor. Others agreed.
- Participants were divided over whether they prefer to discuss their problems with a doctor or a nurse. Some said they didn't want to talk with a nurse; they came to see the doctor. Another said that talking with a nurse could also be helpful.
- A couple of participants said they prefer having a female doctor. Some also said they prefer having an African-American doctor because he or she would be more sensitive to diseases that are common among African-Americans.
- The role of folk medicine was discussed in FG II. Many agreed on the need for alternatives to Western medicine. One respondent said that folk medicine is "coming back." Several said they use folk remedies but if they do, they don't tell their doctors about it.
- Spirituality came up in FG II as it did in FG I but largely at the prompting of the moderator. Participants seemed to believe that spirituality plays an important role in their lives. Some noted that having a health care giver who believes in prayer can be helpful for recovery.
- Respondents spent some time discussing their perceptions of breast cancer. When asked how they would react to news of possible cancer, two said that they were afraid to find out, especially because they knew they are high risk. One participant provided a very eloquent summary of all the fears and thoughts she had when she was diagnosed with ovarian cancer. Respondents also expressed a variety of views about hormonal replacement therapy and its possible relation to breast cancer. All seemed to understand that there were risks to taking or not taking hormonal replacement therapy. Some felt it was worth the risk of breast cancer because the hormones gave them more energy. Others felt the risk of breast cancer outweighed the risk of not taking hormonal therapy.
- Perceptions of behaviors to minimize the risks of breast cancer were mixed. Some respondents said that they did do BSEs and these were the ones who also said they got mammograms. Another woman said she doesn't do BSEs because "if it ain't broke, don't fix it." Another fell in between these two extremes, feeling that she ought to do BSEs but hasn't yet done one on herself or had a mammogram. These respondents seem to represent different parts of continuum in persuasibility.
- Participants addressed questions regarding the use of questionnaires and message design. Participants said that if given a questionnaire to fill out about their health, they probably wouldn't spend much time on it. When asked about breast cancer information presented in a frightening manner, some participants expressed their preference for a positive message. Another said she would like a balance of pros and cons. Another said fear is OK if it grabs your attention but that it's not a good idea to leave people scared at the end.

Focus Group III (FG III)

This focus-group was intended to address issues specifically pertaining to message design. This group was shown five short, 1-2 minute clips of a variety of breast health videos that exemplified different affective and structural approaches to videotaped health communication. The major finding of FG III is that respondents want to be told about breast cancer in a very straightforward way. Below is a list of additional points which follow from this major premise:

- They like the use of "regular people" in the videos and seem to believe that the use of such people enhances the video's credibility.
- They don't want to be told that a mammogram involves no pain, there is pain!
- They want spokespersons who have had breast cancer and who can speak from experience.
- Need to note that breast cancer does not always mean having to get the breast removed. Need to mention that there are other choices.
- The respondents were favorable to the use of pleasant scenery and music but didn't seem to have much to say about formal features otherwise.
- Some respondents thought the plant analogy video might be a little difficult for some people to comprehend, that it was not clear enough on its own, and might require some additional information.
- A combination of formats might be effective.
- Some respondents expressed their fear of getting a mammogram because of what they might find out after it's done (as opposed to fear of the mammogram itself).
- One respondent expressed the concern that radiation from the mammogram or from cancer treatment (it's not clear which she meant) might lead to more cancer.
- They liked the information on Breast Self Exams.
- Video in which the woman was shown getting a mammogram was viewed as most believable. Participants expressed the desire not just to hear about it but to actually see it.

We proposed to use Witte's Persuasive Health Message (PHM) Framework (Witte, 1995) as the structural model for constructing the breast health messages. In general, the application of health communication theory is difficult because of the sheer number and complexity of available theories—factors that tend to inhibit their use in practical settings. Unfortunately, no single, generic theory can be applied to a particular health problem and then effectively used to effect behavioral change in all groups of people. However, Witte's Persuasive Health Message Framework provides a useful blueprint toward message development because it takes into account variables that, if ignored, can undermine well-intentioned health promotion campaigns.³ The PHM framework is composed of elements from the theory of reasoned action,⁴ the elaboration likelihood model,⁵ and

protection motivation theory,⁶ and offers an integrated approach to generating effective campaigns. The PHM framework states that both constant and transient factors must be addressed prior to the development of campaign messages. The constant components serve as a structural foundation in a health promotion message, and include a problem message, an efficacy message, various cues, and an orientation toward a specific audience. The problem message tries to make the audience feel susceptible to a health threat. The efficacy message tries to convince individuals that they are able to perform the recommended response, and that the recommended response effectively reduces or eliminates the threat. The cues refer to those variables that can influence the persuasive process in an indirect manner. The audience profile includes demographic and psychographic information, and makes the message 'fit' the audience.

The cues pertain most particularly to the issue of cultural sensitivity as it is generally understood. For example, many health educators working with African American populations believe that persuasive message acceptance and processing will be enhanced when it is delivered by a high credibility person, or by a same-race, same-SES individual. While this approach may reduce initial resistance, there is a danger that the message will be processed peripherally, i.e., audience members will be persuaded *ONLY* by cues such as credibility, appearance or perceived similarity. In this event, peripheral cues have guided the decision-making process, and not the actual message content. In contrast, when people believe a topic is relevant and important to them, they process the message centrally by carefully listening to, and evaluating the content of the message. Well-planned health messages will include cues that enable message receptivity without overshadowing its content. In addition to credibility, appearance, and similarity, other cue variables related to the source of the message include the manner in which the message is organized, the type of appeal (cognitive or emotional), the number of repetitions in a message, and the vividness of the language and presentation.

The transient components address the particular attributes of the target audience, i.e., salient beliefs, culture, environment, and message goals. Two categories of transient components determine the actual message content and features. First, information relevant to the threat and efficacy of the recommended response must be determined. Second, culture/environment and preferences must be assessed to develop cues and the audience profile. Source and message preferences will aid in the production of cues. The audience profile is developed from cultural (demographics, psychographics) and environmental (potential barriers, e.g., lack of services, lack of transportation) information.

Combination of the transient information and the constants will yield a message that is uniquely personalized to the target audience on a number of levels. First, the targeting of an audience's specific salient beliefs about the threat and efficacy of the recommended response increases involvement in and personal relevancy of the message.⁴ Increased involvement in a message leads to central processing of the message which is desirable because it leads to lasting and stable attitude shifts.⁵ If salient beliefs are targeted in the message then motivation and/or ability of audience members to process the message should increase because the message is relevant to them, and they can understand it.⁴

Within the Persuasive Health Message Framework, data obtained through the focus groups provides the following outline:

Constants

I. Threat

- (A) Susceptibility: targeted population (i.e., African-American women aged 55 and over living in rural Georgia) has a higher incidence of breast cancer than their white American counterparts.
- (B) Severity: high rates of mortality from breast cancer in this the population.

II. Efficacy

- (A) Response efficacy: routine BSEs, CBEs, and mammographies all help minimize the risks of breast cancer.
- (B) Self-efficacy: the procedures of BSEs, CBEs, and mammographies are easy to follow.

III. Cues

(A) Message

- (1) organization of video: a story, narrative.
- (2) organization of lay health care worker presentation
- (3) type of appeal (3 viewing conditions):
 - a. negative
 - b. neutral
 - c. positive
- (4) number of repetitions (as yet to be determined)
- (5) vividness of language (neutral)

(B) Source

- (1) main character (similar in background, i.e., race, age, and SES to targeted population)
- (2) her husband (similar in background, i.e., race, age, and SES to targeted population)
- (3) her friend (similar in background, i.e., race, age, and SES to targeted population)
- (4) her doctor (African-American and probably female)

Transients

I. Message goals

- (A) Overall: to reduce the mortality rate of breast cancer in targeted population.
- (B) Behavior: increasing BSEs, CBEs, and mammographies in targeted population.
- (C) Population: African-American women aged 55 and older living in rural Georgia.

II. Salient beliefs

- (A) Susceptibility: from the focus-group data, many respondents seem to know that they are susceptible to breast cancer.
- (B) Severity: according to focus-group data, perceived severity seems to vary among respondents as a function of how close they are to other people who have gotten breast cancer, especially family members. All seem to understand that breast cancer is potentially fatal.
- (C) Barriers to self-efficacy: although respondents in the focus-group are afraid of getting breast cancer, they also expressed their fear of *knowing* they had breast cancer. In short, knowing one has breast cancer may be more frightening than the breast cancer itself--a significant mitigating factor in mammography usage.
- (D) Response efficacy:
 - (1) Respondents understand that BSEs, CBEs, and mammographies can help minimize the risk of breast cancer.
 - (2) However, many respondents in the focus-group expressed their dislike of the way they are treated in their health care clinics (from the nurses and doctors), which could be a barrier to response efficacy.

III. Salient referents

- (A) Family members, church members, and friends (especially older members of the community who are considered experienced).
- (B) Susceptibility: cannot be determined from present focus-group data.
- (C) Barriers to self-efficacy: cannot be determined from present focus-group data.
- (D) Response efficacy: cannot be determined from present focus-group data.

IV. Cultural/Environmental Variables and Preferences

- (A) Source
 - (1) main character: a "regular" person similar to respondents' own background — i.e., race, age, and SES.

(2) doctor: should also be African-American, though preference for a male or female varied. In either case, race seemed most important.

(B) Channel

(1) video (on television monitor)

(2) lay health care worker (who will present the video)

(C) Message

(1) use simple language (no jargon)

(2) show what it's like to go through a mammography screening

(3) note that breast cancer does not necessarily mean having the breast removed

(4) state up front that mammographies are somewhat painful.

(D) Audience profile

African-American women aged 55 and over living in rural Georgia. Strong religious values. Strong ties to family and network of friends. Some belief in folk medicine. Economically and medically disadvantaged.

VIDEOSCRIPT DEVELOPMENT

After the focus group data were analyzed and structured within the PHM framework, weekly meetings of the GSU Research Team were conducted to discuss the process by which three affectively different messages could be constructed that would both retain cognitive and affective balance and not create comparability problems, i.e., the degree or intensity of persuasion would not be greater or more compelling in one or two of the three messages. Therefore, a challenge of the formulation of the research stimuli was to design messages for each viewing condition (positive, neutral, or negative) that are comparable to each other. If three different scripts were written for the three different viewing conditions, then comparison of results from those conditions would become extremely difficult. Apparent differences from viewing conditions could be either the result of differences in valence, or because the manipulation of the script in one message was stronger than it was for the others. In other words, differences among scripts could become a **CONFOUNDING VARIABLE**. In order to control for this possible spuriousness, we determined that each viewing condition should be as close to the others in every way possible except in terms of valence (our independent variable). The way we have decided to control for this problem is to use the same script for all three viewing conditions. The story line will be open-ended so that the viewer is left uncertain about what happens to the main character after she gets her breast cancer screening. This element responds to the focus group finding that a diagnosis of breast cancer seemed to be more frightening than having the disease itself. Differences among the different viewing conditions will be accomplished through manipulation of the formal features of the audio and visual channels to convey a positive, neutral, or negative valence. For example, in the positive video condition, warm, glowing lighting will be used and will be accompanied by upbeat music in a major key. In the negative video condition, darker (i.e., more ominous) lighting will be used and will be accompanied

by music in a minor key. In the neutral video condition, the lighting will be essentially flat, and it is likely that music will be omitted altogether. In this way, valence of the videos can be manipulated while all other aspects of the videos are kept the same.

Using focus group data structured within the PHM framework, we developed a preliminary ("working") script.

VIDEOSCRIPT PROCESS EVALUATION

At the current time, the working draft of the videoscript has been circulated among a variety of health educators, nurses, physicians, a gerontological researcher, and other faculty members at Morehouse School of Medicine and faculty members and graduate students in GSU Department of Communication. Written subjective evaluations of the draft are being received, and preliminary results indicate that some revisions will be required. Most of the comments are superficial in nature, i.e., names of characters, use of slang or colloquial expressions, story/visual elements that were secondary or non-supportive of the storyline. There has also been consensus on some important structural elements, however, that are more central, i.e., difficulty following the story, difficulty understanding why a particular character did/said ..., a scene or statement that was not believable. One of the most important and consistent findings was that the respondents expressed mild consternation that the dramatic stress of the story was unresolved. This suggests that engagement did, in fact, occur, and that readers were able to identify with the characters. From a theoretical perspective, this finding suggests central processing of information--a very desirable response.

VIDEOSCRIPT ASSESSMENT

An additional level of data gathering will be added. Members of the GSU Research Team will consult with professionals whose occupations are breast health promotion and education among African American populations, specifically, the National Black Leadership Initiative on Cancer, BreasTest and More, Emory University Breast Health Program, Bosom Buddies, Inc.

PRE-TESTING OF MESSAGES

Upon completion of the videoscript process evaluation and assessment, pre-testing of representative video clips will occur to ensure that viewers demographically matched to the target population will be able to understand the message, and to differentiate the affective valences. At the current time, this activity is projected to occur in or near Month 14.

LAY HEALTH WORKER TRAINING CURRICULUM & PROCEDURES MANUAL

We have experienced some difficulties in the development of a training curriculum and procedures manual in terms of accessing the materials that were needed to formulate these documents. However, this work is currently underway by using elements from (1) *Do the Right Thing...The Right Way*, a user's guide for community programs on mammography screening and education developed by The National Project AwarenessSM Partnership, the National Cancer Institute, DeBor and Associates, Inc., Birch & Davis Associates, Inc., Prospect Associates, Inc., (2) *BreasTest & MORE* developed by the Georgia Department of Human Resources, Division of Public Health, Cancer Control Section, and (3) *The Heart of a Healthy Life*, a cardiovascular health education program for people over 50 developed by the American Association of Retired Persons and the American Heart Association. All of these materials provide a basic, tested guide to effective health

education. To this, we will add elements relative to health communication issues, e.g., workshop leaders will be sensitized to the possible confounding nature of incidental affective remarks, and presentation methods that support or undermine the videotaped message. We project that this task will be finished by Month 14.

RECRUIT, HIRE, & TRAIN COMMUNITY LAY HEALTH WORKER

The process of recruitment, hiring, and training of the community lay health workers has been slightly impacted by the decision to devote greater time and more intense effort to the development of the structural components of the videotaped messages. Originally, we expected to recruit, hire, and train the community lay health workers in the second half of Year 01. After some consideration, we decided to delay this activity until the beginning of Year 02. The reasons for this decision are:

- (1) Little could be done by the lay health workers in their home communities other than superficial community organization in preparation for the implementation phase. We felt that important elements of the marketing strategy, i.e., immediacy and anticipation of the workshops (intervention) would be compromised if undertaken too early resulting in a gap of approximately one year between the beginning of the consciousness-raising publicity regarding participant recruitment and workshop planning, and the actual conduct of these activities. In short, valuable momentum of interest would be lost.
- (2) By carrying over the funding originally designated for lay health worker salaries in the second half of Year 01, we were able to provide some flexibility in terms of the levels of efforts that will be required for the fieldwork. Originally projected at 10 hours per week per lay health worker, we felt that this projection may be somewhat modest when evaluated within the context of the variety of unforeseen issues and problems that are customarily attendant to community-based research efforts.

SURVEY QUESTIONNAIRE ASSESSMENT & MODIFICATIONS PRE-TESTING OF QUESTIONNAIRE

The pre- and post-workshop assessment questionnaires will be modified from the 24-item Breast Cancer Awareness Survey developed by the National Black Leadership Initiative on Cancer and the Atlanta Breast Coalition. As stipulated in the protocol, these instruments have been reviewed by appropriate faculty members at MSM who are experienced survey and community-based researchers. They assessed the presentation and appropriateness of each item to the proposed study. The self-administered questionnaire includes the following items: level of cancer awareness including incidence of disease and its management, and curability of stage-specific disease, breast cancer screening history, family history, and sociodemographic data (age, occupation, educational level, and family income). The questionnaire also contains questions focusing on breast health knowledge, awareness of breast cancer warning signals, and attitudes toward breast cancer. Finally, the GSU team has expressed an interest in adding some items that will measure specifically some communicational attributes. Before the assessment instrument is used, it will be reviewed by our IRB, and pre-tested to determine suitability with the target population of this study.

Recommendations in Relation to the Statement of Work

Inasmuch as the development of the script for the videotaped stimuli is of key importance to the successful conduct of this study, we will spend more time for the process evaluation and pre-testing components. This will slightly change the timeline for the study since it was originally intended to develop three scripts and shoot three videos exemplifying the three different emotional valences under investigation. Given our decision to manipulate the cues and heuristic elements of the videotaped stimuli (as discussed above) only one script will be developed and one video will be shot. The emotional valence codes will be manipulated during the post-production phase of video development. This approach will enable control of a wider variety of cognitive and affective variables and result is a more sharply focused message, and intervention components of greater and more accurate comparability.

Recruitment, hiring, and training of the community lay health workers will occur in Month 13 and 14. This approach has enabled us to save Year 01 funds originally allocated for lay health worker salaries against the expectation that more hours will be required than originally projected at 10 hours/week.

Establish of relationships with target communities and assessment of sociodemographics and comparability of communities will occur earlier than projected, i.e., in Months 13 and 14 instead of 16 through 18. The recruitment and hiring of the community lay health workers will provide an excellent opportunity to establish strong and positive relationships, a key element to community-based research in rural, African American communities.

With these changes, we project that the intervention phase will occur as scheduled in Months 19 through 27.

In several areas, we are ahead of schedule. We have already amassed information regarding the sociodemographics and comparability of communities. Similarly, we have already identified mammography and clinical breast exam sites in our target communities, and this activity will continue as introduction of the Study into each community occurs.

STATEMENT OF WORK

Month

| | |
|-------|---|
| 1 - 3 | Focus Groups Videoscript development |
| 3 - 4 | Videoscript process evaluation Videoscript assessment Pre-testing of messages |
| 4 - 6 | Lay Health Worker Training Curriculum Development Develop Procedures Manual |
| 7 - 8 | Recruit, hire, & train Community Lay Health Worker in each site |

| | |
|---------|--|
| 9 - 12 | Survey Questionnaire Assessment & Modifications Pre-testing of Questionnaire |
| 13 - 15 | Video Production |
| 16 - 18 | Establish relationships with target communities Assess sociodemographics and comparability of communities |
| 19 - 20 | Recruit study participants Identify mammography and clinical breast exam sites |
| 21 - 27 | Organize and conduct 5-7 workshops in each target community |
| 28 - 29 | Evaluate data gathered in workshops |
| 30 - 31 | Recruit & train graduate student phone interviewers |
| 32 - 34 | Implement 12-month follow-up |
| 35 - 36 | Analyze data and write reports |

Conclusions

Aside from the issues discussed above regarding the development of the videotaped stimuli and the introduction of the BRIE Study into the target communities via the lay health workers, the Study is proceeding as planned.

References

1. Sung, J, et al. Morehouse's Avoidable Cancer Mortality Project: Cancer Screening Intervention in black women in inner-city community by lay health workers - study design and subjects. *Public Health Reports* 107:381-388, 1992.
2. Sung, J, et al. Effect of a cancer screening intervention in inner-city women conducted by a lay health worker. *American Journal of Preventive Medicine*. In press.
3. Witte, K. Fishing for Success: Using the Persuasive Health Message Framework to generate effective campaign messages. In: *Designing Health Messages*, Maibach & Parrott (eds.), Thousand Oaks, CA, Sage Publications, 1995.
4. Fishbein, M & Ajzen, I. Belief, attitude, intention, and behavior: An introduction to theory and research. Reading, MA: Addison-Wesley, 1975.
5. Petty, RE & Cacioppo, JT. Communication and persuasion: Central and peripheral routes to attitude change. New York, Springer, 1986.
6. Rogers, RW. Cognitive and physiological processes in fear appeals and attitude change: A revised theory of protection motivation. In J. Cacioppo & R. Petty (eds.) *Social psychophysiology*, New York, Guilford, 1983.

ANNOTATED BIBLIOGRAPHY

by Darin W. Klein, PhD

One of our objectives this year has been to collect and review research relevant to our project in a variety of different areas and from a variety of different perspectives. The list below shows our efforts in these major areas.

Message/Stimulus Development: Production Variables

Too many projects in health communication give scant consideration to the role of media production variables. Because media production variables play such a key role in message and stimulus design, we have sought to collect articles on how audio and video production techniques (or formal features) can be used to foster and otherwise enhance comprehension and recall. Research on this question is interdisciplinary, coming primarily from those with backgrounds either in psychology or film studies or both. Particular emphasis in this research has been given to children and television and news comprehension.

Atkin, C.K., and Gantz, W. (1978). Television news and political socialization. *Public Opinion Quarterly*, **42**, 183-197.

Calvert, S.L., and Gersh, T.L. (1987). The selective use of sound effects and visual inserts for children's television story comprehension. *Journal of applied developmental psychology*, **8**, 363-375.

Campbell, T.A., Wright, J.C., and Huston, A.C. (1987). Form cues and content difficulty as determinants of children's cognitive processing of televised educational messages. *Journal of experimental child psychology*, **43**, 311-327.

Clifford, B.R., Gunter, B., and McAleer, J. (1995). *Television and children*. Hillsdale, NJ: Erlbaum.

Collins, W.A. (1979). Children's comprehension of television content. In E. Wartella (ed.), *children communication: media and development of thought, speech, and understanding* (pp. 21-52). Beverly Hills, CA: Sage.

Cowan, N. (1988). Evolving conceptions of memory storage, selective attention, and their mutual constraints within the human information processing system. *Psychological bulletin*, **104**, 163-191.

Friedlander, B.Z., Wetstone, H.S., and Scott, C.S. (1974). Suburban preschool children's comprehension of an age-appropriate television program. *Child development*, **45**, 561-565.

Gunter, B. (1980). Remembering television news: effects of picture content. *The journal of general psychology*, **102**, 127-133.

Gunter, B., Furnham, A., and Frost, C. (1994). Recall by young people of advertisements as a function of programme type and audience evaluation. *Psychological reports*, **75**, 1107-1120.

Hayes, D.S., and Birnbaum, D.W. (1980). Preschoolers' retention of televised events: is a picture worth a thousand words? *Developmental psychology*, **16**, 410-416.

Huston, A.C., Wright, J.C., Wartella, E., Rice, M.L., Watkins, B.A., Campbell, T., and Potts, R. (1981). Communicating more than content: formal features of children's television programs. *Journal of communication*, **31**, 42-48.

Lang, A. (1990). Involuntary attention and physiological arousal evoked by structural features and emotional content in TV commercials. *Communication research*, **17**, 275-299.

Lang, A., Newhagen, J., and Reeves, B. (1996). Negative video as structure: emotion, attention, and capacity. *Journal of broadcasting and electronic media*, **40**, 460-477.

Livingstone, S. (1987). Implicit representation of characters in *Dallas*: a multidimensional scaling approach. *Human communication research*, **13**, 399-420.

Pezdek, K., and Stevens, E. (1984). Children's memory for auditory and visual information on television. *Developmental psychology*, **20**, 212-218.

Rolandelli, D.R. (1989). Children and television: the visual superiority effect reconsidered. *Journal of broadcasting and electronic media*, **33**, 69-81.

Rolandelli, D.R., Wright, J.C., Huston, A.C., and Eakins, D. (1991). Children's auditory processing of narrated and nonnarrated television programming. *Journal of experimental child psychology*, **51**, 90-122.

Srull, T.K., and Wyer, R.S. (1979). The role of category accessibility in the interpretation of information about persons: some determinants and implications. *Journal of personality and social psychology*, **37**, 1660-1672.

Tannenbaum, P.H. (1954). Effect of serial position on recall of radio news stories. *Journalism Quarterly*, **31**, 319-323.

Watkins, B., Calvert, S., Huston-Stein, A., and Wright, J.C. (1980). Children's recall of television material: effects of presentation mode and adult labeling. *Developmental psychology*, **16**, 672-674.

Public Health Campaigns: Theories and Models

The articles below review broad theoretical assumptions made either explicitly or implicitly in public health campaigns previously conducted. They provide a macro perspective especially useful for designing a new public health campaign. Some also focus on the role of the mass media and designing breast cancer screening campaigns in particular.

Alcalay, R., and Shahnaz, T. (1989). Community health campaigns: from theory to action. In R. E. Rice and C.K. Atkins (Eds.), *Public communication campaigns*. Newbury Park, CA: Sage.

Atkin, C.K., and Freimuth, V. (1989). Formative evaluation research in campaign design. In R. E. Rice and C. K. Atkins (Eds.), *Public communication campaigns*. Newbury Park, CA: Sage.

Flay, B.R., and Cook, T.D. (1989). Three models for summative evaluation of prevention campaigns with a mass media component. In R.E. Rice and C.K. Atkins (Eds.), *Public communication campaigns*. Newbury Park, CA: Sage.

Freimuth, V.S. (1995). Mass media strategies and channels: a review of the use of media in breast and cervical cancers screening programs. *Wellness perspectives: research, theory, and practice*, **11**, 79-106.

Hornik, R. (1991). Alternative models of behavior change. In J. Wasserheit, S. Aral, and K. Holmes (Eds.), *research issues in human behavior*, Washington, DC: American society for microbiology.

Hornik, R. (1989). Channel effectiveness in development communication. In R. E. Rice and C. K. Atkins (Eds.), *Public communication campaigns*. Newbury Park, CA: Sage.

Jeffery, R.W. (1989). Risk behaviors and health: contrasting individual and population perspectives. *American psychologist*, **44**, 1194-1202.

McGuire, W.J. (1989). Theoretical foundations of campaigns. In R.E. Rice and C.K. Atkins (Eds.), *Public communication campaigns*. Newbury Park, CA: Sage.

Peetz-Schou, M. (1991). How to measure consumer awareness of mass-media campaigns for public health purposes. *Patient education and counseling*, **30**, 53-59.

Rice, R.E., and Foote, D. (1989). A systems-based evaluation planning model for health communication campaigns in developing countries. In R.E. Rice and C.K. Atkins (Eds.), *Public communication campaigns*. Newbury Park, CA: Sage.

Solomon, D.S. (1989). A social marketing perspective on communication campaigns. In R.E. Rice and C.K. Atkins (Eds.), *Public communication campaigns*. Newbury Park, CA: Sage.

Spenko, D.G., Osuch, J.R., Garlinghouse, C., Rakowski, V., and Glenn, B. (1992). The design and implementation of a community breast cancer screening project. *CA-A cancer journal for clinicians*, **42**, 163-176.

Willms, D.G., Best, J.A., Taylor, D.W., Gilbert, J.R., Wilson, D.M.C., Lindsay, E.A., and Singer, J. (1990). A systematic approach for using qualitative methods in primary prevention research. *Medical anthropology quarterly*, **4**, 391-409.

Zapka, J.G., Costanza, M.E., Harris, D.R., Hosmer, D., Stoddard, A., Barth, R., Gaw, V. (1993). The impact of a breast cancer screening community intervention. *Preventive medicine*, **22**, 34-53.

Public Health Campaigns: Cognitive Factors

Quite a lot of research has gone into how different cognitive factors (i.e., knowledge, beliefs, attitudes, and opinions) intervene to affect the behavioral outcomes of public health campaigns. In many cases, these cognitive factors at least partially explain why public health campaigns usually evidence only a modest degree of success. A number of the articles listed below are concerned specifically with how different cognitive factors predict the success of breast cancer screening and mammography programs. Others seek to explain how these cognitive factors are related to other kinds of public health problems, such as cancer more generally, smoking, sexually transmitted diseases (AIDS especially), and tuberculosis.

Aiken, L.S., West, S.G., Woodward, C.K., and Reno, R.R. (1994). Health beliefs and compliance with mammography screening recommendations in asymptomatic women. *Health psychology*, **13**, 122-129.

Aiken, L. S., Fenaughty, A.M., West, S.J., Johnson, J.J., and Luckett, T.L. (1995). Perceived determinants of risk for breast cancer and the relations among objective risk, perceived risk, and screening behavior time. *Women's health: research on gender, behavior, and policy*, **1**, 27-50.

Bandura, A. (1990). Perceived self-efficacy in the exercise of control over AIDS infection. *Evaluation and program planning*, **13**, 9-17.

Becker, M.H. (1974). The health belief model and sick role behavior. *Health education monographs*, **2**, 409-419.

Becker, M. H., and Maiman, L.A. (1975). Sociobehavioral determinants of compliance with health and medical recommendations. *Medical care*, **13**, 10-24.

Bostick, R. M., Sprafka, J. M., and Potter, J. D. (1993). Knowledge, attitude, and personal practices regarding prevention and early detection of cancer. *Preventive medicine*, **22**, 65-85.

Dervin, B. (1989). Audience as listener and learner, teacher and confidante: the sense-making approach. In R. E. Rice and C. K. Atkins (Eds.), *Public communication campaigns*. Newbury Park, CA: Sage.

Dibble, S. L., Vanoni, J. M., and Miaskowski, C. (1997). Women's attitudes toward breast cancer screening: differences by ethnicity. *Women's health issues*, **7**, 47-54.

DiClemente, C. C., Prochaska, J. O., Fairhurst, S. K., Velicer, W. F., Velasquez, M. M., Rossi, J. S. (1991). The process of smoking cessation: an analysis of precontemplation, contemplation. And preparation stages of change. *Journal of consulting and clinical psychology*, **59**, 295-304.

Fishbein, M., Middlestadt, S. E., and Hitchcock, P. J. (1991). Using information to change sexually transmitted disease-related behaviors: an analysis based on the theory of reasoned action. In J. Wasserheit, S. Aral, and K. Holmes (Eds.), *research issues in human behavior*, Washington, DC: American society for microbiology.

Fishbein, M., Bandura, A., Triandis, H. C., Kanfer, F. H., Becker, M. H., and Middestadt, S. E. (1991). Factors influencing behavior and behavior change, final report. Presented to theorist's workshop, October 3-5, Washington, DC.

Fisher, J. D. (1988). Possible effects of reference group-based social influence on AIDS risk behavior and AIDS prevention. *American psychologist*, **43**, 924-920.

Kelly, J. A., St. Lawrence, J. S., Diaz, Y. E., Stevenson, L. Y., Hauth, A. C., Brasfeld, T. L., Kalichman, S. C. Smith, J. E., Andrew, M. E. (1991). HIV risk behavior reduction following intervention with key opinion leaders of population: an experimental analysis. *American journal of public health*, **81**, 168-171.

Kirscht, J. P. (1974). The health belief model and illness behavior. *Health education monographs*, **2**, 387-408.

Kirscht, J. P. (1974). Research related to the modification of health beliefs. *Health education monographs*, **2**, 455-469.

Maiman, L. A., and Becker, M. H. (1974). The health belief model: origins and correlates in psychological theory. *Health education monographs*, **2**, 336-353.

McCaul, K. D., Schroeder, D. M., and Reid, P. A. (1996). Breast cancer worry and screening. *Health psychology*, **15**, 430-433.

McCaul, K. D., Branstetter, A. D., Glasgow, R. E., and Schroeder, D. M. (1996). What is the relationship between breast cancer risk and screening? A meta-analytic review. *Health psychology*, **15**, 423-429.

Miller, L. Y., and Hailey, B. J. (1996). Challenging hopelessness about cancer in African-American women: education about breast cancer screening. *Journal of gender, culture, and health*, **1**, 99-110.

Rakowski, W., Fulton, J. P., and Feldman, J. P. (1993). Women's decision making about mammography: a replication of the relationship between stages of adoption and decisional balance. *Health psychology*, **12**, 209-214.

Rosenstock, I. M. (1974). The health belief model and preventive health behavior. *Health education monographs*, **2**, 354-386.

Rosenstock, I. M. (1974). Historical origins of the health belief model. *Health education monographs*, **2**, 328-335.

Snow, L. F. (1983). Traditional health beliefs and practices among lower class black Americans. *The western journal of medicine*, **139**, 820-828.

Public Health Campaigns: Demographic Factors

Aside from cognitive factors, there are a number of demographic factors such as race, age, gender, and so forth which also predict the success of public health campaigns. Emphasis on demographic factors in this research seems to have been almost entirely at the expense of cognitive factors. Nevertheless, some studies have attempted to explore how both kinds of factors might be associated with each other to affect particular kinds of health behavior. Such studies are included in the previous list. With few exceptions, the articles below concentrate on the relation between demographic factors and breast cancer screening. Most are concerned in particular with the relation between race and breast cancer, though some explore how other demographic factors, such as age and income, play a role.

Abraham, C. L. (1997). Breast health at midlife: guidelines for screening and patient evaluation. *Geriatrics*, **50**, 58-66.

Boyle, D.M. (1993). Maintaining momentum in cancer prevention research. *Innovations in oncology nursing*, **9**, 14-29.

Calle, E. E., Flanders, W. D., Thun, M. J., and Martin, L. M. (1993). Demographic predictions of mammography and pap smear screening in women. *American journal of public health*, **83**, 53-60.

Caplan, L. S., Wells, B. L., and Haynes, S. (1992). Breast cancer screening among older racial/ethnic minorities and whites: barriers to early detection. *The journal of gerontology*, **47**, 101-110.

Cassel, C. K. (1992). Breast cancer screening in older women: ethical issues. *The journal of gerontology*, **47**, 126-130.

DeBor, M. (1993). What do women do now? *Cancer*, **72**, 1486-1490.

Duelberg, S.I. (1992). Preventive health behavior among black and white women in urban and rural areas. *Social scientific medicine*, **34**, 191-198.

Ehmann, J.L. (1993). *BSE Rap*: intergenerational ties to save lives. *Patient education*, **20**, 1255-1259.

Fink, R., and Shapiro, S. (1990). Significance of increased efforts to gain participation in screening for breast cancer. *American journal of preventive medicine*, **6**, 35-41.

Fox, S. A., and Stein, J. A. (1991). The effect of physician-patient communication on mammography utilization by different ethnic groups. *Medical care*, **29**, 1065-1082.

Gordon, D. R. (1990). Embodying illness, embodying cancer. *Culture, medicine, and psychiatry*, **14**, 275-297.

Gregg, J., and Cuary, R.H. (1994). Explanatory models for cancer among African-American women at two Atlanta neighborhood health centers: the implications for a cancer screening program. *Social scientific medicine*, **39**, 519-526.

Harper, A.P. (1993). Mammography utilization in the poor medically undeserved. *Cancer*, **72**, 1478-1482.

King, E. S., Resch, N., Rimer, B., Lerman, C., Boyce, A., and McGovern-Gorchov, P. (1993). Breast cancer screening particles among retirement community women. *Preventive medicine*, **22**, 1-19.

Lannin, D. R., Mathews, H. F., Mitchell, J., Swanson, M.S., Swanson, F. H., and Edwards, M. S. (1995). The influence of race, socioeconomic factors, and cultural factors on breast cancer stage in the rural Southern United States. Unpublished paper, University of North Carolina.

Lauver, D. (1996). Understanding barriers to mammography use among women of low socioeconomic status. *Journal of women health*, **5**, 473-480.

Lerman, C., Rimer, B., Trock, B., Balshe, M.A., and Engstrom, P. F. (1990). Factors associated with repeat adherence to breast cancer screening. *Preventive Medicine*, **19**, 279-290.

Lind, S. E., Good, M.D., Seidel, S., Csordas, T., and Good, B. (1989). Telling the diagnosis of cancer. *Journal of clinical oncology*, **7**, 583-589.

Mandelblatt, J. Traxler, M., Lakin, P., Kanetsky, P., and Kao, R. (1993). Targeting breast and cervical cancer screening to elderly poor black women: who will participate? *Preventive medicine*, **22**, 20-33.

Mathews, H. F., Lannin, D. R., and Mitchell, J. P. (1994). Coming to terms with advanced breast cancer: black women's narratives from Eastern North Carolina. *Social scientific medicine*, **38**, 789-800.

Mor, V., Pacala, J. T., and Rakowski, W. (1992). Mammography for older women: who uses, who benefits? *The journal of gerontology*, **47**, 43-49.

Morrison, A.S. (1992). Efficacy of screening for breast cancer in older women. *The journal of gerontology*, **47**, 80-84.

O'Malley, M.S., Earp, A. L., and Harris, R. P. (1997). Race and mammography use in two North Carolina counties. *American journal of public health*, **87**, 782-785.

Rimer, B. K. Resch, N., King, E., Ross, E., Lerman, C., Boyce, A., Kessler, H., and Engstrom, P. F. (1992). Multistrategy health education program to increase mammography use among women ages 65 and older. *Public health reports*, **107**, 369-380.

Rutledge, D. N., Hartmann, W. H., Kinman, P. O., and Winfield, A. C. (1988). Exploration of factors affecting mammography behaviors. *Preventive medicine*, **17**, 412-422.

Schaller, R., DeVillis, B. M., Soreson, J. R., Wilson, K. R., Lannin, D. R., and Emerson, J. A. (1994). Breast cancer in African-American families. *Annals New York Academy of Sciences*, **768**, 281-285.

Shankar, A.D. (1997). Pilot study: the influence of cultural components on breast cancer patients' perceptions of their support systems. *The Howard journal of communications*, **8**, 101-111.

Weinberger, M., Saunders, A.F., Bearon, L.B., Gold, D.T., Brown, J. T., Samsa, G.P., and Loehaer, P. J. (1992). Physician-related barriers to breast cancer. *The journal of gerontology*, **47**, 111-117.

Zapka, J. G., and Berkowitz, E. (1992). A qualitative study about breast cancer screening in older women: implications for research. *The journal of gerontology*, **47**, 93-100.

Zapka, J. G., Stoddard, A., Maul, L., and Costanza, M. E. (1991). Interval adherence to mammography screening guidelines. *Medical care*, **29**, 697-707.

Zapka, J. G., Hosmer, D., Costanza, M. E., Harris, D. R., and Stoddard, A. (1992). Changes in mammography use: economic, need, and service factors. *American journal of public health*, **82**, 1345-1351.